PERIODONTAL STATUS AMONG TIBETAN REFUGEES RESIDING IN JODHPUR CITY

ABSTRACT

AIM: The present study is an attempt to evaluate the periodontal characteristics of this Tibetan refugee population and discuss possible oral health promotion activities. **MATERIAL AND METHODS:** 124 Tibetan were examined for the periodontal status using CPI and LOA index in Tibetan refugee camps in Jodhpur city, Rajasthan. **RESULTS:** Overall prevalence of periodontal disease among Tibetan refugees was 69%. Majority of the study participants {253(34%)} had CPI score 2. Periodontal status in Tibetan refugees is significantly ($p \leq 0.05$) associated with age group. Majority of study participants 232(32%) had LOA score 0. **CONCLUSION:** As age increases the periodontal diseases increases among study participants. There is significant association between age groups and periodontal status of Tibetan refugees.

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INTRODUCTION

Periodontal diseases are one of the most common oral pathologies, affect all populations throughout life[1]. It refers to the condition affecting the supporting structure of the teeth; the alveolar bone, cementum and the periodontal ligament. Gingivitis and periodontitis are the most common forms of periodontal disease[2]. The importance of periodontal health cannot be underestimated as severe periodontal disease can cause pain and disability and effects quality of life [3].

Evidence indicates that immigrants and minority ethnic groups should be regarded as "whole populations at risk" on the verge of oral health deterioration. People crossing national and cultural frontiers often originate from populations with disease patterns, health behaviors and health care measures different from those at their destination[4,5]. The main reason for the vulnerability to oral diseases in refugee population is limited access to oral healthcare services because of cultural and language barriers, low awareness of the health system and lack of financial resources[3].

Numerous studies have demonstrated poor oral health status among refugee populations[6-10]. In India majority of refugee population are Tibetans, settled in the largest concentration in the states of Himachal Pradesh and Rajasthan. In Rajasthan, a large number of Tibetan refugees reside in cities of Udaipur and Jodhpur and earn their livelihood by selling woolen cloths.

Since their exodus from Tibet in 1959, their healthand living conditions have not changed much. The move away from the high, arid Tibetan plateau to the lower, moister Himalayan foothills has brought dramatic change to Tibetan culture and the health of the people. Dental treatment has been unavailable except the giving of antibiotics for acute infection or the extraction of teeth by Indian dentists when available. No prevention program for dental disease has existed[11]. There are sparse data regarding the oral health conditions of Tibetan refugees. Hence, the present study is an attempt to evaluate the periodontal characteristics of this Tibetan refugee population and its possible association with demographic characteristics.

MATERIAL AND METHODS

The study was conducted during the months of May and June 2014 in Jodhpur, Rajasthan among 179 Tibetan refugees. There are two settlements of Tibetan refugees in Jodhpur city. Mainly the Tibetan refugees in Jodhpur city sell winter cloths and lives in camps. Ethical clearance was obtained from the ethical committee of Jodhpur dental college, general hospital, Jodhpur, Rajasthan. Informed consent was obtained from the study population before the examination. The study was systematically conducted on a

prescheduled time table. The help of local Tibetan leaders were taken for translation purpose. Local health workers in Tibetan colony accompanied and assisted for study and for arranging the survey camp. American Dental Association Type 3 type of examination[12] was conducted. The recorder was asked to sit close to the investigator for the recordings. The data regarding demography and periodontal health status was recorded on a structured format.

For recording periodontal health status, Community Periodontal Index (CPI) index was used according to WHO oral health assessment Performa 1997[13]. Of the total 179 refugees, 124 refugees could be examined. The examinations were conducted by four examiners whose training and calibration of was conducted in the Department of Periodontics, Jodhpur Dental College, General Hospital, Jodhpur. The recording clerk was given clear instructions about recording data on the assessment form (Performa) prior to the examination. The kappa co-efficient for intra-examiner variability and inter-examiner reliability were found to be 0.86 and 0.89 respectively, reflecting a high degree of conformity in observations. The examinations were followed by oral health education and demonstration of the tooth brushing and free tooth pastes distribution. For subjects needing further dental treatment referral cards were issued and motivated to take the undergo treatment.

The collected data was entered in to MSExcel sheet and analyzed using the SPSS, statistical software (SPSS version 19). Chi square test was applied to examine any association between demographic variables and periodontal conditions. $P \leq 0.05$ was considered to be statistically significant. Confidence interval was taken at 95%.

RESULTS

Table 1 shows the demographic characteristic of the Tibetan refugees. Majority of the population was between the ages of 21-30 with males outnumbering the females.

Table 2 shows that majority of the study participants (253/34%) had CPI score 2, followed by (219/29%) of study participants with CPI score 1; with a significant increase in the scores as age increased. Similar results were obtained for the loss of attachment (LOA) score; with increased severity as aged progressed (Table 3). Males had poorer scores than females; however these results were not statistically significant (Tables 4 and 5).

DISCUSSION

The present cross-sectional study was an attempt to assess the periodontal health status of Tibetan refugees residing in Jodhpur city, Rajasthan, India. Previous studies have

assessed the periodontal status and oral hygiene status in various parts of Himachal Pradesh and Karnataka but not in Rajasthan, as majority of Tibetan refugee population reside in these areas[14, 15].

Table 1. Demographic characterstic of the sampled tebitan refugees.

Age group	**Number**	**Percentage (%)**
0-10 years	3	2.4
11-20 years	15	12
21-30 years	36	28.8
31-40 years	26	20.8
-50 years	17	13.6
>50 years	27	21.7
Total	**124**	**100.0**

Gender	**Number**	**Percentage (%)**
male	87	70.0
female	37	30.0
Total	**124**	**100.0**

Table 2. Community periodontal index (CPI) scores among different age group.

Age Group	**CPI score 0**	**CPI score 1**	**CPI score 2**	**CPI score 3**	**CPI score 4**	**Total**
1-10 years	9 (1%)	9(0.7%)	0 (0%)	0 (0%)	0 (0%)	18 (2%)
11-20 years	39 (6%)	43 (6%)	8 (1%)	0 (0%)	0 (0%)	90 (13%)
21-30 years	8 (1%)	112 (15%)	85 (11%)	11(2%)	0 (0%)	216 (29%)
31-40 years	1 (0.1%)	42 (6%)	80 (11%)	31 (4%)	2 (0.2%)	155 (21%)
41-50 years	0 (0%)	10 (1%)	44 (6%)	39 (5%)	8 (1%)	101 (14%)
>50 years	0 (0%)	3 (0.3%)	37 (5%)	85 (11%)	39 (6%)	164 (21%)
Total	**57(8%)**	**219 (29%)**	**253 (34%)**	**166 (22%)**	**49 (7%)**	**744 (100%)**

Chi-square =99.735 , p≤0.000***; p≤0.05*, p≤0.01**, p≤0.00***.

Table 3. Lost of attachment (LOA) index scores among different age groups in Tibetan refugees.

Age group	**LOA score 0**	**LOA score 1**	**LOA score 2**	**LOA score 3**	**LOA score 4**	**LOA score 9**	**Total**
1-10 years	0	0	0	0	0	16 (2%)	16 (2%)
11-20 years	52 (7%)	2 (0.2%)	0	0	0	36 (5%)	90 (12%)
21-30 years	128 (17%)	78 (10%)	10 (1%)	0	0	0	216 (29%)
31-40 years	43 (6%)	79 (11%)	29 (4%)	4 (0.5%)	1(0.1%)	0	156 (21%)
41-50 years	6 (1%)	49 (7.8%)	36 (5%)	9 (1%)	2 (0.2%)	0	102 (14%)
>50 years	3 (1%)	16 (2%)	65 (8.5%)	66 (9%)	12 (1.7%)	0	162 (22%)
Total	**232 (32%)**	**224 (30%)**	**140 (19%)**	**79 (10%)**	**15 (2%)**	**52 (7%)**	**744 (100%)**

Chi-square =151.72 , p≤0.000***; p≤0.05*, p≤0.01**, p≤0.00***.

Several different approaches for measuring periodontal disease have been developed by different individuals and groups. Indeed several indices, each with its own strengths and weaknesses, have been designed and implemented, but each incorporates subjective and objective assessments of differing weights into an ordinal scale. Perhaps

more importantly, different studies have used different measures of periodontal disease, which has made the comparison of data between studies more complicated[16]. In the present study periodontal status was assessed by using CPI and Loss of Attachment (LOA).

Table 4. Community periodontal index (CPI) scores among male and female in Tibetian refugees.

Age group	CPI score 0	CPI score 1	CPI score 2	CPI score 3	CPI score 4	Total
Males	41(6%)	152 (20%)	181 (24%)	116 (16%)	30 (4%)	520 (70%)
Females	16 (2%)	67 (9%)	73 (10%)	50 (6%)	17 (3%)	224 (30%)
Total	**57 (8%)**	**219 (29%)**	**253 (34%)**	**166 (22%)**	**49 (7%)**	**744 (100%)**

Chi-square= 1.21, p>0.05; p≤0.05*, p≤0.01**, p≤0.00***.

Table 5. Lost of attachment (LOA) index scores among male and female in Tibetian refugees.

Age group	LOA score 0	LOA score 1	LOA score 2	LOA score 3	LOA score 4	LOA score 9	Total
Males	160 (22%)	156 (21%)	97 (13%)	56 (8%)	11 (1.5%)	42 (6%)	520 (70%)
Females	72 (10%)	68 (9%)	43 (6%)	23 (2%)	04 (0.5%)	12 (1%)	224 (30%)
Total	**232 (32%)**	**224 (30%)**	**140 (19%)**	**79 (10%)**	**15 (2%)**	**54 (7%)**	**744 (100%)**

Chi-square= 0.576, p>0.05; p≤0.05*, p≤0.01**, p≤0.00***.

In the present study overall prevalence of periodontal disease was 69% as compared to the study conducted by Mahajan et al.[14] where the overall prevalence was 72%. The presence of calculus was the main finding (32%) which was supported by Mahajan et al. [14], Vrbicet et al.[17], Smith and Lang[18], Nunn et al. [19], Moshaet et al.[20], Wang et al.[21] and Varenneet et al.[22]. Prevalence of periodontal pocket in the present study was 29% which was very high as compared to past studies conducted by Mahajan et al.[14], Nunn et al.[19], Galan et al.[23] and Zimmerman et al.[24]. These findings highlight the importance of vulnerability of special groups such as refugees toward poor oral health.

There was a significant (p≤0.05) association between age group and periodontal status, which was similar to that reported by Mahajan et al.[14] and de Macedo et al.[25]. In the present study as age increased, the severity of periodontal diseases increased. Ageing is associated with an increased incidence of periodontal disease[26,27]. However it has been suggested that the increased level of periodontal destruction observed with aging is the result of cumulative destruction rather than a result of increased rates of destruction. Thus aging is not a risk factor per se[28]. Sexual dimorphisms exist in the prevalence and severity of many human conditions and diseases. Numerous studies have reported periodontal disease to be more prevalent in males than females[29- 32].

In the present study periodontal status of males was worse than females but the difference was not statistically significant.

This study has important limitations because the sample was not randomly drawn from the population; only the participants present on the days of survey were included. The smaller sample size limits the generalizability of the results. Specific interventions cannot be tailored to the conditions of the Tibetans. Nevertheless the present study provides a firsthand account of periodontal status of Tibetan population in Rajasthan; which is environmentally dramatically different from their natural habitat of Tibet.

CONCLUSION

From the above study it was concluded that periodontal pockets and loss of attachment was widespread among the Tibetan refugees, and as the age increases the severity of periodontal disease increases.

The study provides a good platform for integration of more of preventive and therapeutic services for Tibetan refugees. Future studies should be conducted to assess various factors in prevalence of periodontal disease among Tibetan refugees.

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